



**Second Annual Review – NASA University Leadership Initiative –  
Composite Manufacturing Technologies for Aerospace Performance at Automotive Production Rates**

**October 13, 2022**

**Center for Composite Materials  
University of Delaware**

*Hybrid Meeting (In-Person and Teams, [Registration Required](#))*

The Second Annual Review of the NASA University Leadership Initiative Composite Manufacturing Technologies for Aerospace Performance at Automotive Production Rates program will be held at the University of Delaware Center for Composite Materials on October 13, 2022, starting at 8:30am (EST). This is an open meeting. Attendees may attend in-person or via Teams. Registration is required.

A team led by the University of Delaware Center for Composite Materials (UD-CCM) is addressing technology barriers and education/workforce training needs in composites manufacturing that provides aerospace performance at high production rates for Urban Air Mobility (UAM) and commercial air platforms. Our approach for manufacturing of complex geometry composite parts uses our highly aligned short fiber technology (called *TuFF* or Tailorable universal Feedstock for Forming) that can be stretch formed while retaining continuous fiber equivalent properties and aerospace quality.

Overview talks on UAM Technology needs and *TuFF* processing, microstructure, material formats and material properties (static and fatigue) will be presented. Technical sessions will provide updates on micromechanics of aligned short fiber composites, forming of aligned short fiber composites and part process development. Lab tours of UD-CCM (Newark site) are planned for in-person attendees.

If you plan to attend in-person please read page 2 of the attachment for information regarding hotels, directions, parking, and current Covid-19 protocols.

**Second Annual Review - NASA University Leadership Initiative -  
Composite Manufacturing Technologies for Aerospace Performance at  
Automotive Production Rates**

**Date:**

October 13, 2022 (All times EST)

**Location:**

Center for Composite Materials

University of Delaware

Hybrid Meeting (In-Person and Teams, Registration Required)

Click [HERE](#) to Register for the event.

**Time**

8:30 Introduction to ULI (NASA, Ms. Jegley and Dr. Datta)

8:40 ULI Overview and Education/Workforce Highlights (UD-CCM, Prof. Gillespie and SU, Prof. Mensah)

9:00 Overview of UAM Technology Needs (Joby, Mr. Geriguis)

9:20 TuFF Processing, Material Formats and Material Properties (UD-CCM, Dr. Yarlagadda)

10:00 Break

**Micromechanics of Aligned Short Fiber Composites**

10:15 Process Induced Fiber Waviness and Residual Stress (UD-CCM, Mr. Chen and Dr. Parambil)

10:35 Stochastic Strength Prediction (UD-CCM, Prof. Gillespie)

11:00 Physics of Fiber Alignment and Fiber Breakage (UD-CCM, Dr. Simacek)

**Forming of Aligned Short Fiber Composites**

11:15 Constitutive Models and Forming Limits (UD-CCM, Dr. Cender)

11:30 Forming Process Development (UD-CCM, Dr. Tierney)

11:45 Self-healing Vitrimers (SU, Mr. Tetteh and Prof. Li)

12:00 Lunch

**Part Process Development**

1:00 Joby Door (Joby, Geriguis and UD-CCM, Dr. Yarlagadda);

1:15 Spirit Cascade Vanes (Spirit, Dando and UD-CCM, Dr. Cender)

1:30 Q/A Session with Attendees

End of Teams Meeting/Presentations

CCM Lab Tour and Demonstrations

EAC Meeting (closed)

2:30 Travel to ATTL for Tour

3:00 ATTL Tour (TuFF pilot facility and forming cell demonstrations)

EAC Meeting (closed, continued)

4:00 EAC Feedback (Maher Associates, Mr. Maher)

Discussion and Wrap

4:30 Adjourn

If attending in-person, plan to arrive by 8:00 AM on October 13th to the below address.

- **UD-CCM Main Campus Facility**  
Composites Manufacturing Science Laboratory  
101 Academy Street, Room 106  
Newark, DE 19716

**Directions:**

<https://www.ccm.udel.edu/contact-us/directions-to-ccm/>

**Parking:**

City of Newark (Main Campus)

<https://cityofnewarkde.maps.arcgis.com/apps/webappviewer/index.html?id=2db339cc672a49cf84dfe0d57503f255>

**Hotels:**

Use this link for lodging recommendations.

<https://campustravel.com/university/university-of-delaware/>

**COVID-19: Fall 2022**

- [Testing](#) — Individuals are strongly encouraged to be tested 24 hours before their arrival on campus.
- [If you test positive for COVID-19](#) — You must isolate yourself for five days, then wear a mask for five days.
- [If you are exposed to someone with COVID-19](#) — You must wear a mask for 10 days, get tested five days after exposure, and monitor for symptoms for 10 days.

Please reach out to Kristen Scully ([kscully@udel.edu](mailto:kscully@udel.edu)) if you have any questions.